

### REMARKS/ARGUMENTS

Upon entry of the present amendments, claims 1, 3-5, 9-17, 20-25, and 29-41 are pending in the present application. Claims 1, 3, 29, and 30 have been amended. New claim 42 has been added to better define and thus provide an adequate level of protection for the present invention. Amended claims 1, 3, 29 and 30 and new claim 42 find support throughout the Specification. The particulars of the support are explained below in reference to the Substitute Specification.

Claim 1 is amended to recite the limitations of "by biasing the detector" and "vary the spectral response of said detector using biasing to produce a sweep of detector spectral responses, each spectral response having a cut off wavelength dependent on the intensity of incident radiation and biasing." The limitations are in particular supported by paragraphs [0053] ("One example way to expand this layer 66 is to apply an external electrical bias (voltage) 68."); [0054] ("Specifically, by increasing the magnitude of the external voltage supply 68, the upper bandwidth response 93 of the diode decreases."); [0055] ("For every choice of cutoff band 70, a new range of detectable spectra is observed."); and [0049] ("In particular by increasing the intensity 71 of the light source to high level 91, the range of wavelengths 73 that can be measured at a particular time is decreased."). Claim 3 is also amended to recite a limitation: "varying the spectral response of said detector using biasing to produce a sweep of detector spectral responses, each spectral response having a cut off wavelength dependent on the intensity of incident radiation." The limitation is supported as described above in connection with claim 1.

Amended claim 1 also recites a limitation of "for each detector spectral response within the sweep spectral responses, vary the intensity of said source radiation to produce a sweep of source radiation with a range of intensities directed at said sample." The limitation is in particular supported by paragraph [0055] ("In practice, for every stepped change in the external voltage 68, a number of different intensities 71 are emitted from the light source 1. For every choice of cutoff band 70, a new range of detectable spectra is observed."). Claim 3 limitation,

which parallels claim 1 limitation, but uses a method claim language, is also supported as described here.

Amended claims 1 and 3 recite a limitation "for each detector spectral response within the sweep of spectral responses, obtain output from the detector resulting from the detection of each of the source radiation intensities affected by the sample, the detector output for each intensity being influenced by the detector's cut-off wavelength at that intensity for that spectral response." The limitation is in particular supported by Figs. 5A and 5B.

Amended claims 1 and 3 further recite "wherein the combination of the detector's outputs at each of the intensities for the sweep of source radiation for each of the spectral responses in the detector sweep provide a combined set of data across a spectrum." The limitation is in particular supported by paragraphs [0056] ("The controlling module, typically a microprocessor 3, selects a voltage to be supplied to the detector 35, controlling the width of the depletion region 66, and thus selects a predetermined bandwidth that the detector 35 will be sensitive to.") and paragraph [0055] ("The band sweep (due to bias voltage) and intensity sweep (due to light source) lead to a combined set of data points arranged across the full spectrum of the device under investigation. This way the characterization of all the spectra under investigation is possible.").

Claims 1 and 3 limitation of "combined set of data" is supported in particular by paragraph [0055] ("By combining the control of the light source intensity 71 and the external voltage 68 applied to the detector 35 by the microcontroller 3, individual components from the sample signal can be determined.").

Claims 29 and 30 have been amended to delete the limitation "at a range of frequencies" and "that produces source radiation at a range of frequencies," respectively.

New claim 42 is in particular supported by paragraph [0049] ("In particular by increasing the intensity 71 of the light source to high level 91, the range of wavelengths 73 that can be measured at a particular time is decreased. Reducing the intensity 71 of the light source

to low level 90 increases the range of wavelengths 73 that can be measured but only up to the maximum bandwidth response of the detector 72.").

Reconsideration of the application is respectfully requested in light of the foregoing amendments and the following remarks.

**I. REJECTION UNDER 35 U.S.C. § 112**

Claims 1 and 3 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. The Office Action states that claims 1 and 3 introduce new matter into the disclosure of the invention. In particular, the Office Action states that the original disclosure does not describe how is the frequency of the radiation varied by varying the intensity of the radiation. The dependent claims 5, 9-17, 20-25, and 29-41 were also rejected because they depend from the rejected claims 1 and 3.

In order to further the prosecution of the present application, Applicant has amended claims 1 and 3 as set forth above without acquiescence. Applicant submits that claims 1 and 3, as amended, as well as their dependent claims 5, 9-17, 20-25, and 29-41 overcome the rejection under § 112, first paragraph, because the claims are supported by the written disclosure as explained in detail above.

Therefore, Applicant respectfully submits that independent claims 1, 3, and 42 are allowable. Furthermore, considering that dependent claims 5, 9-17, 20-25, and 29-41, which include all the features and elements of their respective parent claims, are also allowable at least because they depend from their allowable parent claims.

**CONCLUSION**

In view of the foregoing, Applicant submits that this application is in condition for allowance, and a formal notification to that effect at an early date is requested.

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PATENT

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (415) 576-0200.

Respectfully submitted,



Dr. Jadran (Adrian) Mihailovic  
Reg. No. 57,874

TOWNSEND and TOWNSEND and CREW LLP  
Two Embarcadero Center, 8<sup>th</sup> Floor  
San Francisco, California 94111-3834  
Tel: (415) 576-0200  
Fax: (415) 576-0300  
JM/rgy  
61357066 v1